AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.   (original):   A fragmentation processing device for having fixed packets with IP (internet protocol) packets divided into payload portions written inputted in order from one including a head portion of the IP packets to one including a last portion thereof, comprising a fragmentation processing determination means, an IP header processing means and IP packet assembling means:

the fragmentation processing determination means for acquiring, from the fixed packets including an IP packet header of said IP packets, information on a size of the IP packets included in the IP packet header, comparing the size of the IP packets with an MTU (Maximum Transfer Unit) size, and determining, in the case where the size of the IP packets is larger than the MTU size, that said IP packets require to have a fragmentation process executed;

the IP header processing means for, in the case where it is determined by the fragmentation processing determination means that said IP packets require to have a fragmentation process executed, extracting the IP packet header from the fixed packets including the IP packet header, and creating an IP packet header after the fragmentation process from the IP packet header; and

the IP packet assembling means for, in the case where it is determined by said fragmentation processing determination means that said IP packets require to have a

fragmentation process executed, creating a plurality of IP packets of a size smaller than said

MTU size to which IP packet payloads of the IP packets included in said fixed packets are added

behind the IP packet header created by said IP header processing means in the order in which

they are inputted to said fragmentation processing device, sending these IP packets, and in the

case where it is determined by the fragmentation processing determination means that said IP

packets do not require to have a fragmentation process executed, assembling IP packets from

said fixed packets in the order in which they are inputted to said fragmentation processing device

and sending them outside the device.

2. (currently amended): The fragmentation processing device according to claim 1,

wherein said-header division of said fixed packets includes at least one of information on an

input line on which the IP packets are inputted and information on an input port of the fixed

packets; and

said IP packet assembling means is characterized by, as for the IP packets assembled

from said fixed packets, acquiring at least one of information on the input line and information

on the input port of the fixed packets from the fixed packet header on which said IP packets are

written, and outputting said created IP packets to an output line corresponding to the input line

and said input port of the fixed packets.

3. (currently amended): The-A fragmentation processing apparatus having a plurality of

the fragmentation processing devices according to claim 1, wherein each of the fragmentation

processing devices is characterized by being associated with the input line on which the IP

packets are inputted and creating the IP packets from the fixed packets on which the IP packets

inputted from the associated input line are divided and written.

4. (currently amended): ~~The~~ A fragmentation processing apparatus having a plurality of the fragmentation processing devices according to claim 1, wherein each of the fragmentation processing devices is characterized by being associated with the input line on which the IP packets are inputted and creating the IP packets from the fixed packets on which the IP packets inputted from the associated input line are divided and written,

said fragmentation processing apparatus further comprising a fixed packet separating device, wherein the fixed packet separating device is inputting the fixed packets to said fragmentation processing device for each of the input lines on which the IP packets are inputted and the input ports to which the fixed packets are inputted.

5. (currently amended): ~~The~~ A fragmentation processing apparatus according to claim 1, said fragmentation processing apparatus further comprising an IP packet integrating device, wherein the IP packets assembled by said IP packet assembling means are outputted to the input line on which the IP packets are inputted and the output line corresponding to the input port of the fixed packets.

6. (currently amended): The fragmentation processing device according to claim 1, wherein said IP packet assembling division is characterized by, after acquiring ~~said~~ N' pieces of fixed packet, creating IP packets in order.

7. (original): The fragmentation processing device according to claim 1, wherein said fixed packet is characterized by being an ATM cell.

8. (original): A fragmentation processing device for having fixed packets with IP (internet protocol) packets divided into payload portions written inputted in order from one including a head portion of the IP packets to one including a last portion thereof, comprising a fragmentation processing determination means, an IP header processing means, an IP packet assembling means and a number of assembled fixed packets calculating means:

the fragmentation processing determination means for acquiring, from the fixed packets including an IP packet header of said IP packets, information on a size of the IP packets included in the IP packet header, comparing the size of the IP packets with an MTU (Maximum Transfer Unit) size, and determining, in the case where the size of the IP packets is larger than the MTU size, that said IP packets require to have a fragmentation process executed;

the IP header processing means for, in the case where it is determined by the fragmentation processing determination means that said IP packets require to have a fragmentation process executed, extracting the IP packet header from the fixed packets including the IP packet header, and creating an IP packet header after the fragmentation process from the IP packet header;

the IP packet assembling means for, in the case where it is determined by said fragmentation processing determination means that said IP packets require to have a fragmentation process executed, creating a plurality of IP packets of a size smaller than said MTU size to which IP packet payloads of the IP packets included in said fixed packets are added behind the IP packet header created by said IP header processing means in the order in which they are inputted to said fragmentation processing device, sending these IP packets, and in the

case where it is determined by the fragmentation processing determination means that said IP

packets do not require to have a fragmentation process executed, assembling IP packets from

said fixed packets in the order in which they are inputted to said fragmentation processing device

and sending them outside the device; and

the number of assembled fixed packets calculating means for, in the case where it is

determined by said fragmentation processing determination means that said IP packets require to

have a fragmentation process executed, calculating N from a payload size of the fixed packets,

said MTU size and a size of an IP packet header included in said IP packet header by

(IP packet header + (fixed packet payload × N)) ≤ MTU size   ... (1),

and posting said IP packet assembling means on the largest number N' of the calculated Ns,

wherein said IP packet assembling means is characterized by, on receipt of said posting,

assembling the IP packet payloads included in the fixed packets by N' pieces in order from the

fixed packet including the head portion of said IP packets and adding the IP packet header

created by said IP header processing means to the head of the IP packet payloads to create IP

packets, and in the case where the number of the fixed packets created from said N' arises a

remainder, from the one inputted earlier to the fragmentation processing device to the one

including the last portion of the IP packets, setting the number of said remainder N' and forming

IP packets from said N' pieces of fixed packet and then sending the IP packets outside the device.

9. (original): The fragmentation processing device according to claim 8, wherein said header division of said fixed packets includes at least one of information on an input line on which the IP packets are inputted and information on an input port of the fixed packets; and

said IP packet assembling means is characterized by, as for the IP packets assembled from said fixed packets, acquiring at least one of information on the input line and information on the input port of the fixed packets from the fixed packet header on which said IP packets are written, and outputting said created IP packets to an output line corresponding to the input line and said input port of the fixed packets.

10. (original): The fragmentation processing apparatus having a plurality of the fragmentation processing devices according to claim 8, wherein each of the fragmentation processing devices is characterized by being associated with the input line on which the IP packets are inputted and creating the IP packets from the fixed packets on which the IP packets inputted from the associated input line are divided and written.

11. (original): The fragmentation processing apparatus having a plurality of the fragmentation processing devices according to claim 8, wherein each of the fragmentation processing devices is characterized by being associated with the input line on which the IP packets are inputted and creating the IP packets from the fixed packets on which the IP packets inputted from the associated input line are divided and written,

said fragmentation processing apparatus further comprising a fixed packet separating device, wherein the fixed packet separating device is inputting the fixed packets to said fragmentation processing device for each of the input lines on which the IP packets are inputted

and the input ports to which the fixed packets are inputted.

12. (original): The fragmentation processing device according to claim 8, wherein said IP packet assembling division is characterized by, after acquiring said N' pieces of fixed packet, creating IP packets in order.

13. (original): The fragmentation processing device according to claim 8, wherein said fixed packet is characterized by being an ATM cell.

14. (original): The fragmentation processing apparatus according to claim 8, wherein said fragmentation processing apparatus further comprising an IP packet integrating device, wherein the IP packets assembled by said IP packet assembling means are outputted to the input line on which the IP packets are inputted and the output line corresponding to the input port of the fixed packets.